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EXAMINER

WELLS, KENNETH B

ART UNIT

PAPER NUMBER

2816

DATE MAILED: 04/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/608,055

Applicant(s)

AKSAMIT, RANDY J.

Examiner

Kenneth B. Wells

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 24-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. Applicant's election of Group I, corresponding to claims 1-23, is acknowledged. Claims 24-26 are now withdrawn from consideration by the examiner.

2. The disclosure is objected to because of the following informalities: on page 2, line 15, a comma should be inserted after the word "however". On page 8, line 10, the comma should be deleted after the word "system" (first occurrence). On page 11, line 17, a comma should be inserted after the word "low". Appropriate correction is required.

3. Claims 1-19 are objected to because of the following informalities: in claim 1, the word "circuitry" should be changed to --circuit--. Note that the same change is needed in each of the other claims. In claim 6, lines 3-4, "one of" should be deleted. In claim 7, line 7, "the sleep signal" lacks antecedent basis, as does "the well-tap" on line 8. Appropriate correction is required.

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the the limitation of

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the regular and supplemental voltage supplies being provided by a single voltage source and the regular voltage supply being decoupled from the supplemental voltage supply during the standby mode must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR

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1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. Claims 1-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not understood what is meant by "through a well-tap" in each of the independent claims. As shown in the drawings, current flows from terminal 418 through the PFET 432 (instant Fig. 4) to the data-retention subcircuits when in normal mode, and from a supplemental voltage supply directly to the data-retention subcircuits when in standby (sleep) mode. It is not seen where or when current ever flows through a well-tap (presumably the well-tap of FET 432). Thus, the claims are indefinite because they are misdescriptive.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 7, 12, 14 and 20-22, to the extent understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over either Stan et al or Ooishi '433 in view of any one of Levinson, Notani et al, Ooishi '576, Mulatti et al and Bhavnagarwala et al.

For purposes of this rejection, the limitation "through a well-tap" is interpreted simply to mean connected to a well-tap, i.e., current flows from a circuit node to the data-retention subcircuits where the node is connected to a well region of a FET.

Each of the primary references discloses a master-slave latch with two cross-coupled inverters (feedback) and sleep mode. Not disclosed is the supply-switching subcircuit providing current to the inverters from a supplemental voltage supply during a standby mode. It is old and well-known, however, to use a supply-switching subcircuit providing current to the inverters from a supplemental voltage supply during a standby mode.

See, for example, Fig. 2 of Levinson, Fig. 1 of Notani et al, Fig. 3 of Bhavnagarwala et al, Fig. 3 of Mulatti et

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al and Figs. 4A, 4B and 5 of Ooishi '576. The supplemental voltage in Levinson is VDD' (used when FET M2 is cut off). The supplemental voltage in Notani et al is voltage VA1 (used when FET QA3 is cut off). The supplemental voltage in Mulatti et al is the voltage on capacitor C1 (used when FETs MP1 and MP2 are cut off). The supplemental voltage in Bhavnagarwala et al is the voltage PMOS bulk (used when FET M6 is cut off). The supplemental voltage in Ooishi '576 is VC (used when FET PW is cut off).

7. Claims 2, 4, 5, 6, 8-10, 13, 15-18 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Stan et al or Ooishi '433 in view of any one of Levinson, Notani et al, Ooishi '576, Mulatti et al and Bhavnagarwala et al as applied to claims 1, 3, 7, 12, 14 and 20-22 above, and further in view of Ogawa.

As to claims 2, 4 and 9, the use of passgate and isolation transistors is also old and well-known in the art, as taught by Ogawa in Fig. 2. Note the passgate TM1A and isolation gate TM3A, and also note that the order of these two transmission gates is irrelevant (i.e., a design choice), i.e., any person having ordinary skill would easily recognize that the operation will be the same if in

Fig. 2 of Ogawa gate TM3A was on the right and gate TM1A was on the left (just swapping these two gates with each other).

As to claim 5, the use of lower leakage devices would have been obvious because the references all deal with power conservation, thus suggesting the desire to reduce current or charge leakage.

As to claim 6, note inverters 25a and 25b.

As to claim 8, note the operation of the secondary references noted in paragraph five, supra.

As to claim 10, turning off the Vcc supply during standby (either to the master or slave) also would have been obvious because it is old and well-known in the art to cut off power to any subcircuit if it is not needed to be powered on (to save the most amount of power), official notice being taken of this fact.

As to claims 13, 15-18 and 23, these claims recite the same limitations as discussed above and are therefore rejected for the same reasons noted above.

8. Claims 11 and 19 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include

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all of the limitations of the base claim and any intervening claims.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Note Figs. 2 and 3 of Son et al.

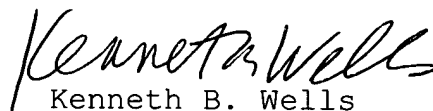
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth B. Wells whose telephone number is (571)272-1757. The examiner can normally be reached on Monday through Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan, can be reached at (571)272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For

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more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kenneth B. Wells
Primary Examiner
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March 31, 2006